

## Rediscovery of *Cymodocella algoense* from South Africa (Crustacea: Isopoda: Sphaeromatidae)

Brian Kensley and Mary Bursey

(BK) Department of Invertebrate Zoology, National Museum of Natural History,  
Smithsonian Institution, Washington, D.C. 20560, U.S.A.;

(MB) East London Museum, P.O. Box 11021, Southernwood 5213, South Africa

*Abstract.*—The tiny sphaeromatid isopod *Cymodocella algoense*, which is characterized by a bulbous tubular posterior pleotelson, is rediscovered 120 years after having been described from a single specimen from Algoa Bay. The new material was collected from the delta of the Nahoon River on the east coast of South Africa.

Stebbing (1875) described a single tiny sphaeromatid isopod taken from the sand and fragments in a collection of sponges and gorgonians sent to him from Algoa Bay, South Africa. The species has not been recorded since. In 1910, Stebbing cast some doubt on the accuracy of the original locality data. Barnard (1940), in his list of *Cymodocella* species from South Africa, mentions *C. algoensis* with the annotation “species dubia, juv.” thereby casting uncertainty on its identity.

In the course of an ecological survey of the benthos of the flood-tidal delta of the Nahoon River estuary, East London, on the east coast of South Africa, seven intertidal and seven subtidal sites were sampled by portable hydraulic suction sampler. Seven tiny adult female sphaeromatids were collected at two of the sites. On examination they proved to be the long forgotten *Cymodocella algoense*, which is here redescribed. The Nahoon River estuary is about 200 km north-east of the type locality, Algoa Bay. Three specimens have been deposited in the National Museum of Natural History, Smithsonian Institution (USNM 253240), two in the South African Museum, Cape Town, and two in the East London Museum, South Africa.

Family Sphaeromatidae  
Subfamily Dynameninae

*Cymodocella algoense* (Stebbing, 1875)  
Figs. 1-3

*Sphaeroma algoense* Stebbing, 1875:187,  
pl. 15, fig. 3.

*Cymodocella algoensis*.—Stebbing, 1905:  
30; 1910:430.—Barnard, 1940:492 (species dubia).—Bruce, 1995:14.

*Material.*—5 non-ovigerous ♀, total length 2.9-4.0 mm, dissected ♀ 3.3 mm; Nahoon River estuary flood-tidal delta, East London, South Africa, 1.6 m at bottom of channel at mouth, low spring tide, coarse sand, coll. M. Bursey, 22 Feb 1993.—2 non-ovigerous ♀, total length 3.0-4.0 mm; Nahoon River estuary flood-tidal delta, East London, South Africa, 2 m on steep sloping bank 500 m from mouth, low spring tide, sand, coll. M. Bursey, 8 Feb 1993.

*Description.*—Female: Body dorsally strongly arched; surface of cephalon, pereon, and pleon smooth. Epistome roughly triangular, distally rounded, lateral margins slightly convex, leading to short, rounded, diverging ‘legs’. Pleotelson reaching well beyond uropodal rami, consisting of broad, inflated basal half having 2 obscure, submedian protuberances, posterior half tubu-

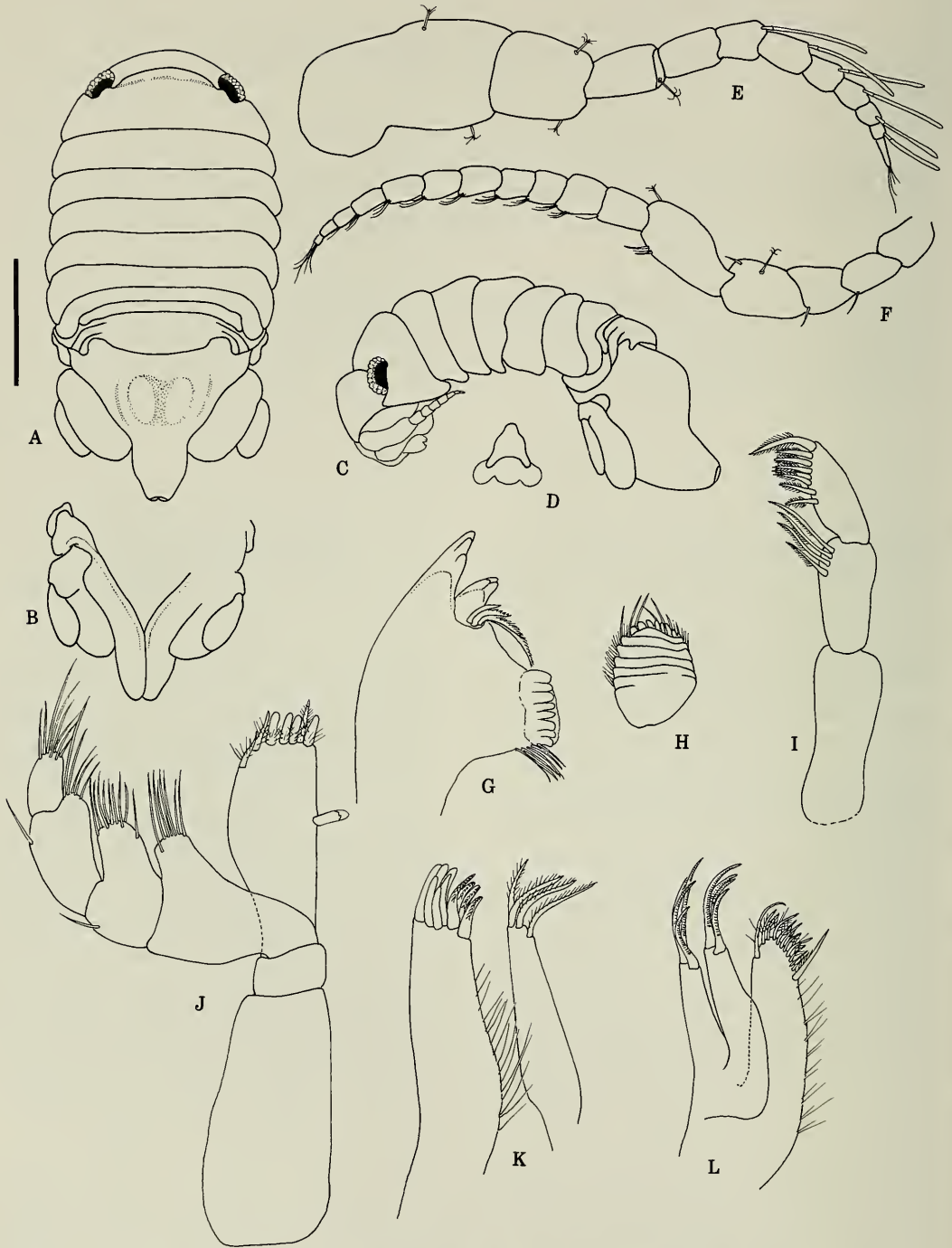


Fig. 1. *Cymodocella algoense*: A, Female in dorsal view, scale = 1 mm; B, Posterior pleon in ventral view; C, Female in lateral view; D, Epistome; E, Antennule; F, Antenna; G, Mandible; H, Grinding surface of mandibular molar; I, Mandibular palp; J, Maxilliped; K, Maxilla 1; L, Maxilla 2.



Fig. 2. *Cymodocella algoense*: A-G, Pereopods 1-7 respectively.

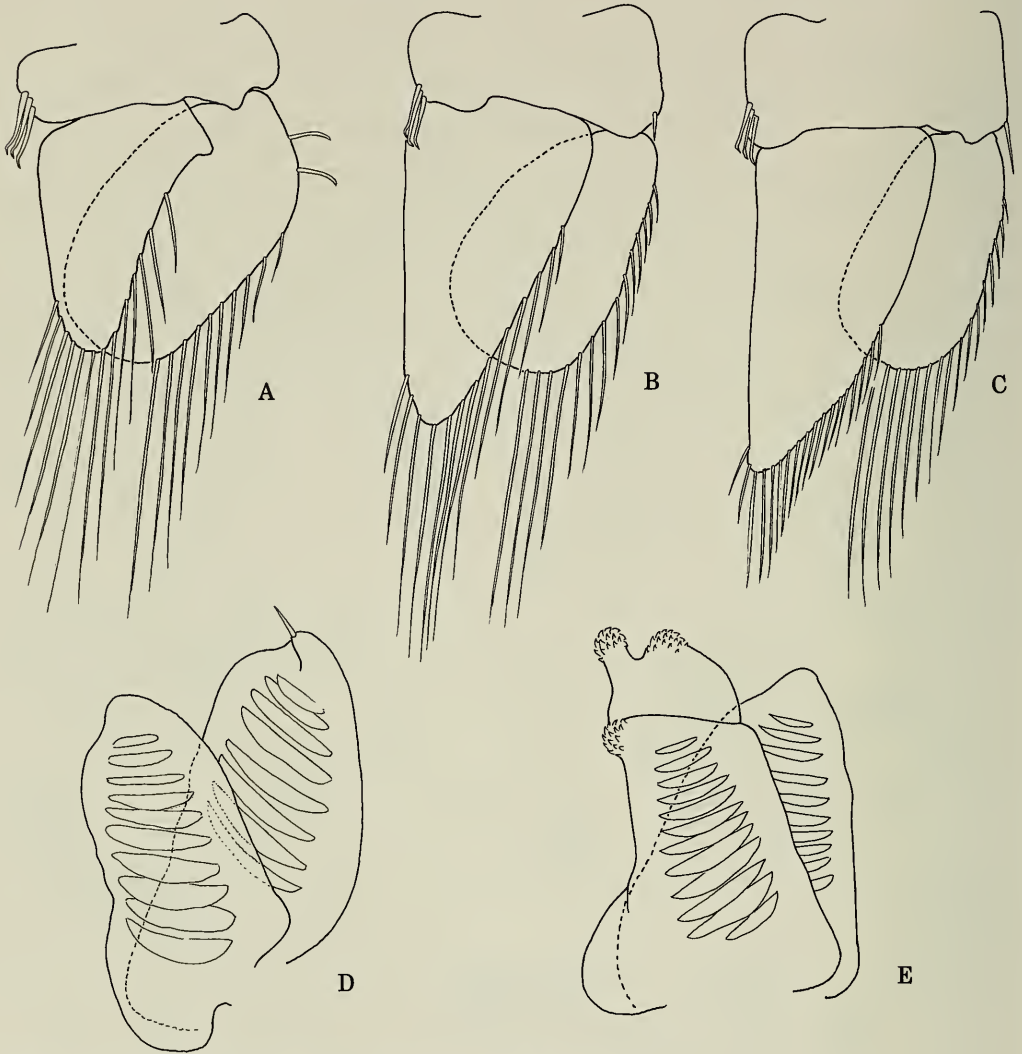


Fig. 3. *Cymodocella algoense*: A-E, Pleopods 1-5 respectively.

lar, apically slightly narrowed with circular foramen.

Antennular peduncle with robust basal article twice length of article 2, flanking and reaching anteriorly beyond epistome; article 3 slightly shorter and about half width of article 2; flagellum of 9 articles, single aesthetasc present on articles 3-8. Antennal peduncle of 5 articles, articles 1 and 2 short, subequal; articles 3-5 increasing in length distally; flagellum of 11 articles. Mandible with sclerotized incisor having 3 cusps; lacinia mobilis with 2 cusps; 2

short plus 2 more elongate fringed spines in spine-row; molar truncate, grinding surface subcircular, ridged, with marginal setae; palp with 4 fringed setae distally on article 2, 8 stout fringed setae on article 3. Maxilla 1, outer ramus with 5 broad simple and 4 denticulate distal spines; inner ramus with 4 circumplumose setae. Maxilla 2, inner ramus with about 12 mesiodistal circumplumose setae; outer ramus with 4 elongate denticulate spines distally on each lobe. Maxilliped, endite distally having 7 stout, basally circumplumose and distally

rounded setae, with single coupling hook on mesial margin; articles 2–5 of palp distomesially setose, articles 2 and 3 mesiodistally somewhat lobed. Pereopod 1 more robust but shorter than following pereopods; basis having pile of short stiff setules on dorsal surface; ischium with several simple setae on dorsal surface; merus with single stout anterodistal and posterodistal fringed seta; carpus triangular, with very short free anterior margin, with stout posterodistal fringed seta; propodus with 3 stout fringed setae on posterior surface; dactylus having bilobed accessory spine at base of unguis. Pereopod 2 more slender than following legs; basis with pile of short stiff spinules on anterior surface; ischium with 3 elongate simple setae on anterior surface; merus with 2 simple anterodistal setae; carpus rectangular,  $\frac{2}{3}$  length of propodus. Pereopods 3–7 essentially similar, pereopod 7 slightly more slender than preceding legs; basis and ischium with pile of short spinules on anterior surface; ischium with 4–6 elongate simple setae on anterior surface; merus much shorter than ischium, with 2–4 simple setae on rounded anterodistal lobe; carpus with single bifringed seta distally, except in pereopod 7 which has 6 bifringed setae; anterior surfaces of merus, carpus, and propodus having numerous short scales/spinules; dactylus with bifid accessory spine at base of unguis. Pleopods 1–3 each with elliptical exopod bearing plumose marginal setae; endopod triangular, subequal in length to exopod in pleopod 1, reaching well beyond exopod in pleopods 2 and 3, bearing plumose marginal setae. Pleopod 4, both rami pleated, exopod with single short distal seta. Pleopod 5, both rami pleated, exopod with transverse suture in distal half, armed with 3 spinulose lobes. Uropod with exopod freely articulating under endopod, elliptical, considerably shorter than endopod, latter distally rounded.

Male: unknown.

*Remarks.*—Bruce (1995), in a revision of the tube-tailed sphaeromatids, demonstrated that the genus *Cymodocella* was polyphy-

letic, defined a second genus, *Diclidocella*, to accommodate some of the species, moved two southern African species to *Ischyromene*, and removed *C. hawaiiensis* Bruce, 1994, from the group altogether.

The genus *Cymodocella* Pfeffer, 1887, currently contains four species (see Bruce 1995:5). The type species, *C. tubicauda* Pfeffer, 1887, was redescribed by Brandt & Wägele (1989). *Cymodocella algoensis* can now be included in this group, agreeing well with the revised diagnosis provided by Bruce (1995). Although Stebbing's description of *C. algoense* is limited, the figure of the whole animal in dorsal view shows the distinctively shaped convex-sided pleotelsonic tube. The remaining four South African species are of uncertain generic status, and require redescription, given the lack of detail in existing descriptions.

#### Acknowledgments

The first author thanks Leon Engelbrecht, Robson Ntsabo, and Deon Smit for helping to operate the hydraulic pump during sampling. Dr. Niel Bruce of the Zoological Museum, Copenhagen, commented on the manuscript, and generously shared his unpublished work on the tube-tailed sphaeromatids, which greatly improved this short contribution. We are also grateful to Ms. Marilyn Schotte for reading a draft of the paper.

#### Literature Cited

- Barnard, K. H. 1940. Contributions to the crustacean fauna of South Africa. XII. Further additions to the Tanaidacea, Isopoda, and Amphipoda, together with keys for the identification of the hitherto recorded marine and fresh-water species.—*Annals of the South African Museum* 32(5):381–543.
- Brandt, A., & J.-W. Wägele. 1989. Redescriptions of *Cymodocella tubicauda* Pfeffer, 1887, and *Exosphaeroma gigas* (Leach, 1818) (Crustacea, Isopoda, Sphaeromatidae).—*Antarctic Science* 1: 205–214.
- Bruce, N. L. 1994. New records of marine isopod crustaceans (Sphaeromatidae) from Hawaiian waters.—*Crustaceana* 67(3):381–386.

- . 1995. The taxonomy and phylogeny of tube-tailed sphaeromatid isopods (Crustacea) with descriptions of new species and a new genus from southern Australia.—*Ophelia* 43:127–180.
- Harrison, K., & J. P. Ellis. 1991. The genera of the Sphaeromatidae (Crustacea: Isopoda): a key and distribution list.—*Invertebrate Taxonomy* 5: 915–952.
- Pfeffer, G. 1887. Die Krebse von Süd-Georgien nach der Ausbeute der Deutschen Station 1882–1883.—*Jahrbuch der Hamburgischen Wissenschaftlichen Anstalten* 4:43–150.
- Stebbing, T. R. R. 1875. On some new exotic sessile-eyed crustaceans.—*Annals and Magazine of Natural History* (4)15:184–188.
- . 1905. On the Isopoda. Pages 1–64, in W. A. Herdman, Report to the Government of Ceylon on the Pearl Oyster Fisheries of the Gulf of Maanaar, Supplementary Report 23.
- . 1910. General catalogue of South African Crustacea.—*Annals of the South African Museum* 6(4):281–593.